ARIZONA GAME AND FISH DEPARTMENT
HERITAGE DATA MANAGEMENT SYSTEM

Invertebrate Abstract **Element Code:** IILEPJ6051
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CLASSIFICATION, NOMENCLATURE, DESCRIPTION, RANGE

NAME: *Speyeria nokomis nokomis*
COMMON NAME: Blue-black Silverspot Butterfly, Nokomis Fritillary, Great Basin Silverspot Butterfly, Seep Fritillary, Western Seep Fritillary Nokomis
SYNONYMS: *Speyeria nokomis nigrocaerulea*; *Argynnis nokomis*
FAMILY: Nymphalidae

AUTHOR, PLACE OF PUBLICATION: For *Argynnis nokomis* it is Edwards, 1862 and for *Speyeria nokomis nokomis* it is Dos Passos and Grey, 1947.

TYPE LOCALITY: Some taxonomists say it is Mount Sneffels, Ouray County, Colorado and others say it is in the vicinity of Hatch Wash, San Juan County, Utah.

TYPE SPECIMEN: For *Speyeria nokomis nokomis* it is AMNH (36915).

TAXONOMIC UNIQUENESS: Per discussion in NatureServe Explorer 2001: "The taxonomy is a vital issue for conservation management. In 1994 three subspecies were candidates for federal protection, but it is uncertain what populations are designated by these taxa. Additionally, other subspecies may be just as deserving of protection. The confused taxonomy is an obstacle to formal listing of any of the subspecies. For these reasons a brief review of "the very muddled history of this taxon" (Grey, 1989) is presented here.

The species was first described as *Argynnis nokomis* by Edwards (1862) based on a specimen in poor condition with undoubtedly inaccurate locality data but clearly from the Rocky Mountains (Brown 1965). This specimen was subsequently misplaced. Later, Edwards changed his description based on California material (what is now considered "good" subspecies *appacheana*) and this description and material were used in Holland's (1898) "The Butterfly Book," perpetuating a mistake (Brown, 1965).

Dos Passos and Grey (1947) assigned *nokomis*, *nitocris*, *apacheana*, *nigrocaerulea*, *coerulescens*, and *wenona* as subspecies of *Speyeria nokomis* and designated a neotype for *nokomis nokomis* collected from Mt. Sneffels, Ouray County, Colorado. The likelihood of Mt. Sneffels as the type locality for *nokomis nokomis* has been widely disputed on historical and ecological grounds (Brown, 1965; Ferris and Fisher, 1971; Miller and Brown, 1981) but Grey (1986) argues that the specimen meets the requirements of a neotype in that it is from the Rocky Mountains and matches Edwards' (1862) original description; furthermore, *nokomis nokomis* has recently been collected from the area.

Other authors (Brown, 1965; Ferris and Fisher, 1971; Gillette, pers. comm.) point out the possibility that the material ascribed to Edwards 1862 was actually collected on the Macomb expedition in 1859. This version would put the type locality for *nokomis nokomis* in the vicinity of Hatch Wash, San Juan County, Utah, near the geographic center of the range for *Speyeria nokomis* at the species level (Gillette, pers. comm.).

In 1964, Dos Passos amended his treatment of the species and placed *nitocris* and *nigrocaerula* under synonymy with *nokomis nokomis* without giving reasons. Ferris and Fisher (1971) took issue with the treatment of Dos Passos (1964) and argued that *nitocris* be retained as a formal subspecies based on differences in "facies, habitat, and geographic location." Ssp. *nigrocaerula* was considered a far eastern form and synonym of *nitocris*. In the same paper they discuss intergradation between *nokomis nokomis* and *nokomis apacheana* across the Great Basin in Utah and Nevada. Miller and Brown (1981) list *nokomis, nitocris, coerulescens,* and *apacheana* as the U.S. subspecies and place *nigrocaerulea* under synonymy with *nokomis* (in contrast to Ferris and Fisher's 1971 treatment)."

In the popular modern butterfly guides two contrary taxonomic treatments can be found, although they are not explicitly discussed. The most common treatment (Howe, 1975; Ferris and Brown, 1981; Tilden and Smith, 1986) follows the general scheme of Dos Passos and Gray (1947), Ferris and Fisher (1971), and Miller and Brown (1981): *nokomis, nitocris, coerulescens,* and *apacheana* are recognized as the U.S. subspecies with the general distributions as given above in this abstract.

An alternative is presented by Scott (1986), who seems to follow Dos Passos (1964): ssp. *nitocris* is not recognized and the distributional range of ssp. *nokomis* includes Arizona and New Mexico. The ssp. *nigrocaerulea* is generally neglected by these guides.

Thus, depending on the view taken, *nokomis nokomis* can be seen as a narrowly endemic subspecies found only at a few locations in western Colorado and eastern Utah, or as a more broadly distributed taxon found in Colorado, Utah, Arizona, New Mexico, and perhaps even Nevada.

DESCRIPTION: For the species *Speyeria nokomis* the wingspan is 2 ½ - 3 1/8 in. (6.3-7.9 cm). Also for the species the upper side of the male is a bright brownish orange with darkened wing bases and dark markings. Sub marginal chevrons do not touch the very even black marginal line. The upper side of the female is black and the outer half of the wing has cream-colored spots. Both sexes have hind wing below with black-bordered silver spots. For *Speyeria nokomis nokomis* the hind wing disc is light brown in males and deep olive in females.

AIDS TO IDENTIFICATION: For *Speyeria nokomis nokomis* the hind wing disc is light brown in males and deep olive in females.

ILLUSTRATIONS: Color photo of species (Opler *in* http://www.npwrc.usgs.gov/resource/distr/lepid/bflyusa/az/82.htm)
Color photo of species (*In* http://www.nearctica.com/butter/plate13/Snokom.htm.

TOTAL RANGE: Some taxonomists consider this subspecies to be a narrowly endemic subspecies found only at a few locations in Colorado and eastern Utah while others consider it a more broadly distributed taxon found in Colorado, Arizona, Utah, New Mexico and perhaps even Nevada.

RANGE WITHIN ARIZONA: Arizona.

SPECIES BIOLOGY AND POPULATION TRENDS

BIOLOGY: Their front legs are greatly reduced and the larvae are nocturnal.

REPRODUCTION: For the species males patrol for receptive females, who walk on the ground to lie, singe eggs near host plants. Unfed, first-stage caterpillars hibernate and in the spring they feed on the leaves of the host. They have one brood from late July-September.

FOOD HABITS: For the species *Speyeria nokomis* the caterpillar host plant is *Viola nephropphylla*. The adults feed on flower nectar including that from thistles.

HABITAT: Found in streamside meadows and open seepage areas with an abundance of violets in generally desert landscapes. The colonies are often isolated.

ELEVATION: Unknown

PLANT COMMUNITY: Unknown

POPULATION TRENDS: Unknown

SPECIES PROTECTION AND CONSERVATION

ENDANGERED SPECIES ACT STATUS: None (USDI, FWS 1996)
[C2 USDI, FWS 1994]
[C2 USDI, FWS 1991]
[C2 USDI, FWS 1989]

STATE STATUS:

OTHER STATUS: Forest Service Sensitive (USDA, FS Region 3 1999)

Group 3, full species level (NNDFW, NESL 2005)
[Group 3, full species (NNDFW, NESL 2000)]

MANAGEMENT FACTORS: Problems for the species as a whole mainly includes habitat loss, along with herbiciding, heavy grazing and changes to hydrology. Over-collecting has not apparently been a problem so far but delayed reproduction by females increases impact from collecting on this genus. This is a potential problem.

PROTECTIVE MEASURES TAKEN: Unknown

SUGGESTED PROJECTS: Unknown

LAND MANAGEMENT/OWNERSHIP: Unknown

SOURCES OF FURTHER INFORMATION

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MAJOR KNOWLEDGEABLE INDIVIDUALS:

ADDITIONAL INFORMATION:

Revised: 2002-07-13 (AMS)

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